



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,442	11/20/2003	Gregory D. Plowman	034536-0180	6668

22428 7590 07/08/2005

FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

NASHED, NASHAAT T

ART UNIT	PAPER NUMBER
----------	--------------

1656

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/716,442

Applicant(s)

PLOWMAN ET AL.

Examiner

Nashaat T. Nashed, Ph. D.

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/20/03</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1656

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1656.

The application has been amended as requested in the communication filed November 20, 2005. Accordingly, claims 1-11 and 14-32 have been canceled.

Claims 12 and 13 are pending and under consideration.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code, see for example pages 45, lines 3 and 8, page 48, line 3, page 104, lines 7, 13, and 20, page 106, line 4, page 108, line 15, page 109, lines 10 and 11, page 110, line 12, page 113, line 6, page 114, lines 21, 24 and 27-29, and page 115, last line. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP 608.01.

The disclosure is objected to because of the following informalities:

- (a) The assay described on page 121, lines 14-20 is an incomplete kinase assay and not a phosphatase activity. A protein phosphatase substrate is a phosphorylated protein. The only phosphate-containing reagent in the assay is a radiolabeled ATP.

Appropriate correction is required.

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). Specifically, applicants have not indicated the relationship between the instant application and copending application 09/866,987.

Priority Date for Claims 12 and 13:

Provisional applications 60/246,974, filed November 13, 2000, and 60/208,291, filed May 30, 2000, as well as non-provisional application 09/866,987 filed May 15, 2001 do not contain the amino acid sequence of SEQ ID NO: 2. Since the sequences are only disclosed in the parent application, serial number 09/986,992 ('992), the priority date of the instant claims is the filing date of the '992 application, i. e., November 13, 2001.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 1656

Claims 12 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific or substantial asserted utility or a well-established utility.

Applicants disclose the nucleic acid sequences (SEQ ID NO: 1) encoding the amino acid sequence of SEQ ID NO: 2. The polypeptide of SEQ ID NO: 2 is sought to be a protein phosphatase, which is a non-specific asserted utility. Applicant assigned the phosphatase utility to the polypeptide of SEQ ID NO: 2 based on a marginal sequence homology, at best, observed with a protein phosphatase 2C-like from *Arabidopsis thaliana* (Database: PIR, Accession number T50783 submitted July 2000 by Bevan *et al.*). The specification indicates that SEQ ID NO: 2 is 35% identical to the phosphatase 2C-like from *A. thaliana*, see page 114, first paragraph. In contrast, the examiners alignment of the two sequences produced 18.5% overall sequence homology, and 35.4% best local homology. So, it appears that polypeptide of SEQ ID NO: 2 is assumed to be a phosphatase based on a low sequence homology (18.5% or 35%!) observed to a polypeptide resembling a protein phosphatase, that has never been shown to be a phosphatase of any kind. Since sequence homology, if it exists, does not impart functional homology, one of ordinary skill in the art would doubt that the polypeptide of SEQ ID NO: 2 is a protein phosphatase of any kind. Even, if the examiner accepts the phosphatase as a credible asserted utility, which the examiner has to accept, phosphatase is a class of enzymes, which catalyzes the hydrolysis of many phosphorylated proteins. Each member of the class is expected to have different substrate having different structure and functions, and its action on that specific substrate is expected to have a specific biological consequences. The specification does not disclose a specific function of the polypeptide of SEQ ID NO: 2, its relationship to any disease, or any specific real world use. The specification does not disclose a single specific disease, which can be treated by a modulator of activity for the polypeptide of SEQ ID NO: 2. The wish list of diseases and disorders mentioned in the specification at pages 56-66 and claims 15 and 33-35 is noted, but there is no reason to believe that a modulator of the activity of the polypeptide would treat any of the mentioned diseases. It is highly unlikely that the phosphatase of SEQ ID NO: 2 would be involved with so many the diverse diseases and syndromes cited in the claims and specification. No teaching in the specification that any of the cited diseases or syndromes is due to an excess or lack of the specific phosphatase activity of SEQ ID NO: 2, which may be treated with inhibitor or activator, respectively. The specification describes non-specific functions and uses for the protein, nucleic acid, modulator of activity of the alleged phosphatase activity, and antibodies. The utility of the nucleic acid is said to be used in a method to detect a human gene and to recombinantly make the polypeptide of SEQ ID NO: 2 which neither the gene nor the polypeptide associated with any specific use or a disease. Also, the utility of a modulator is to treat just about any disease. It appears that the main utility of the nucleic acid, polypeptide, and modulator is to carry out further research to identify the biological function and possible diseases associated with the specific phosphatase activity of SEQ ID NO: 2. Substantial utility defines a "real world" use. Utilities that require or constitute carrying

Art Unit: 1656

out further research to identify or reasonably confirm a "real world" context of use are not substantial utility. Thus, the claimed invention has no specific or substantial asserted utility.

Applicant is referred to the revised interim guidelines concerning compliance with utility requirement of 35 U.S.C. 101, published in the Official Gazette and also available at [www.uspto.gov](http://www.uspto.gov).

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12 and 13 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either asserted utility or a well-established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "a natural binding partner" in claim 13 renders the claim indefinite because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. The specification does not identify any natural or man-made binding partner to the phosphatase of SEQ ID NO: 2, and one of ordinary skill in the art would not know what they are. For examination purposes only, it is assumed that the phrase means any binding partner.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section

Art Unit: 1656

122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Au-Young *et al.* (IDS: WO 01/96546).

Au-Young *et al.* teach the human nucleic acid sequence of SEQ ID NO: 10 encoding the phosphatase of SEQ ID NO: 1 and named it PP1, see the sequence listing. The nucleic acid of SEQ ID NO: 10 taught by Au-Young *et al.* comprises the entire nucleic acid sequence of SEQ ID NO: 1 of the instant application. Also, the amino acid sequence of SEQ ID NO: 1 taught by Au-Young *et al.* is identical to the amino acid sequence of SEQ ID NO: 2 of the instant application. Also, Au-Young *et al.* teach the protein phosphatase activity of the polypeptide of SEQ ID NO: 1, see page 2, second paragraph. In addition, they teach methods of identifying modulator of the phosphatase activity *in vitro* and *in vivo*, see page 9 and 10, and page 38; a wish-list of disease and syndromes to treat with the modulator of the phosphatase activity (claims 12 and 133), see also the last paragraph at page 39 through the end of the first paragraph at page 42. The amino and nucleic acid sequences of SEQ ID NO: 1 and 10, respectively, taught by Au-Young are fully disclosed in provisional application 60/212,447, filed June 16, 2000 which is a priority document for WO 01/96546.

Claims 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Xiao (IDS: WO 01/96571).

Xiao teaches the nucleic acid sequence of SEQ ID NO: 17 encoding the human phosphatase of SEQ ID NO: 19, see the sequence listing. The nucleic acid of SEQ ID NO: 17 taught by Xiao comprises substantially the entire nucleic acid sequence of SEQ ID NO: 1 of the instant application. The phosphatase of SEQ ID NO: 19 taught by Xiao is identical to the amino acid sequence of SEQ ID NO: 2. Also, Xiao teaches of identifying modulator of the phosphatase activity *in vitro* and *in vivo*, see pages 45-47, as well as the use of modulator of the phosphatase activity of the polypeptide of SEQ ID NO: 2 to treat a wish list of disease, which include all diseases and syndrome listed in the claims (claims 12 and 13, see page 58 through page 65. The priority documents of Xiao do not contain the amino acid sequence of SEQ ID NO: 2.

Claims 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. patent 6,653,102 ('102).

Art Unit: 1656

The '102 teaches the nucleic acid sequence of SEQ ID NO: 3 encoding the human phosphatase of SEQ ID NO: 4, see the sequence listing. The phosphatase of SEQ ID NO: 4 taught in '102 patent is identical to the amino acid sequence of SEQ ID NO: 2. The priority documents of the '102 contain the amino acid sequence of SEQ ID NO: 2 and its relationship to neurodegenerative diseases. Also, the '102 patent teaches that the polypeptide of SEQ ID NO: 4 is involve in Alzheimer's disease, methods of identify modulator of the polypeptide both *in vivo* and *in vitro*, said modulator of the phosphatase activity of the polypeptide of SEQ ID NO: 4 could be used to treat neurodegenerative diseases including Alzheimer's disease (claims 12 and 13), see column 5, lines 6-20; column 32, line 25-64; and column 34 line 16 through column 35, line 11.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashaat T. Nashed, Ph. D. whose telephone number is 571-272-0934. The examiner can normally be reached on MTTF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen M. Kerr can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nashaat T. Nashed, Ph. D.  
Primary Examiner  
Art Unit 1656